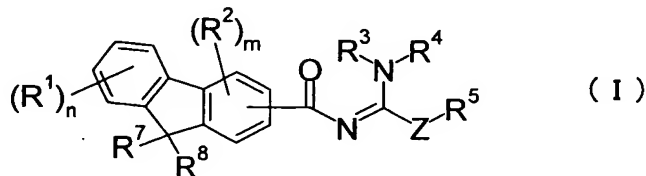


Claim

1. A fluorene derivative represented by the following
general formula (I) or a pharmaceutically acceptable salt
5 thereof,



(symbols in the formula represent the following meanings,

R^1 and R^2 : the same or different from each other and each

10 represents $-R^0$, a lower alkenyl, a lower alkynyl, a halogen,

$-OH$, $-O-R^0$, $-O-CO-R^0$, $-NH_2$, $-NR^6-R^0$, $-CN$, $-NO_2$, $-CHO$, $-CONH_2$,

$-CO-NR^6-R^0$, $-CO_2H$, $-CO_2-R^0$, $-CO-R^0$, $-NR^6-CO-R^0$, $-NR^6-CO_2-R^0$,

$-O-CO-NR^6-R^0$, $-SH$, $-S(O)_p-R^0$, $-S(O)_2-NH_2$, $-S(O)_2-NR^6-R^0$,

$-NR^6-S(O)_2-R^0$, $-R^{00}-O-CO-R^0$, $-R^{00}-NR^6-R^0$, $-R^{00}-CN$, $-R^{00}-CONH_2$,

15 $-R^{00}-CO-NR^6-R^0$, $-R^{00}-CO_2H$, $-R^{00}-CO_2-R^0$, $-R^{00}-CO-R^0$,

$-R^{00}-NR^6-CO-R^0$, $-R^{00}-NR^6-CO_2-R^0$, $-R^{00}-O-CO-NR^6-R^0$, a cycloalkyl

or a nitrogen-containing saturated hetero ring, wherein said

nitrogen-containing saturated hetero ring may be substituted

with 1 or 2 substituent groups selected from the group

20 consisting of a lower alkyl, $-OH$, $-O-R^0$, $-NH_2$, $-NR^6-R^0$ and

oxo ($=O$);

R^0 : the same or different from one another and each

represents a lower alkyl which may be substituted with one

or more substituent groups selected from the group

consisting of -OH, -O-C₁₋₄ alkyl, -NH₂, -NR⁶-C₁₋₄ alkyl and a halogen;

R⁶: the same or different from one another and each represents a lower alkyl or H;

5 R⁰⁰: the same or different from one another and each represents a lower alkylene;

p: 0, 1 or 2;

n: 0, 1 or 2;

m: 0 or 1;

10 R⁷ and R⁸: the same or different from each other and each represents -H, -R⁰, a halogen, -OH, -O-R⁰, -NH₂, -NR⁶-R⁰, -NR⁶-CO-R⁰, -O-R⁰⁰-OH, -O-R⁰⁰-O-R⁰, a cycloalkyl or an oxygen-containing saturated hetero ring, or R⁷ and R⁸ may together form a group selected from the group consisting of oxo (=O),
15 =N-OH, =N-OR⁰ and tetrahydropyranylidene, or R⁷ and R⁸ may together form a lower alkylene which may be interrupted by 1 or 2 divalent groups selected from the class consisting of -O-, -S(O)_p-, -NR⁶- and -CONR⁶-, and may form a 3- to 8-
20 membered ring together with the C atom to which they are linked;

Z: -NH-;

R³: -H or R⁰; and

R⁴ and R⁵: the same or different from each other and each represents -H, -R⁰, -CO₂-R⁰, or -CO-R⁰, or R⁴ and R⁵ may

25 together form a divalent group and may form a 5-membered hetero ring together with the -N-C-Z- group to which R⁴ and

R⁵ are linked, wherein Z may be -O- or S-, and said 5-membered ring may be substituted with 1 or 2 substituent groups selected from a lower alkyl, -OH, -O-R⁰, -NH₂, -NR⁶-R⁰ and oxo (=O)).

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2. The fluorene derivative or pharmaceutically acceptable salt thereof described in claim 1, wherein R³ is -H or R⁰, and R⁴ and R⁵ are -H or R⁰.

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3. The derivative or pharmaceutically acceptable salt thereof described in claim 1, wherein each of R³, R⁴ and R⁵ is -H.

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4. The derivative or pharmaceutically acceptable salt thereof described in claim 3, wherein R⁷ and R⁸ may be the same or different from each other and each represents -H, -R⁰, -OH, -O-R⁰, -O-R⁰⁰-OH or -O-R⁰⁰-O-R⁰, or R⁷ and R⁸ together form oxo group.

20

5. The derivative or pharmaceutically acceptable salt thereof described in claim 3, wherein R⁷ and R⁸ together form a "lower alkylene which may be interrupted by 1 or 2 divalent groups selected from the class consisting of -O-, -S(O)_p-, -NR⁶- and -CONR⁶", and form a 3- to 8-membered ring together with the C atom to which they are linked.

25

6. The derivative or pharmaceutically acceptable salt thereof described in claim 1, which is selected from the group consisting of N-(diaminomethylene)-9-hydroxy-9H-fluorene-2-carboxamide, 9-chloro-N-(diaminomethylene)-9H-fluorene-2-carboxamide, N-(diaminomethylene)-9-(hydroxyimino)-5-(hydroxymethyl)-9H-fluorene-2-carboxamide, 8-chloro-N-(diaminomethylene)-9-hydroxy-9H-fluorene-2-carboxamide, N-(diaminomethylene)-9-hydroxy-9-methyl-9H-fluorene-2-carboxamide, N-(diaminomethylene)-9-hydroxy-9-methyl-9H-fluorene-2-carboxamide (optically active substance A), N-(diaminomethylene)-9-hydroxy-9-methyl-9H-fluorene-2-carboxamide (optically active substance B), N-(diaminomethylene) spiro[1,3-dithiolane-2,9'-fluorene]-2'-carboxamide, N-(diaminomethylene)-4',5'-dihydro-3'H-spiro[fluorene-9,2'-furan]-2-carboxamide, N-(diaminomethylene)-4',5'-dihydro-3'H-spiro[fluorene-9,2'-furan]-2-carboxamide (optically active substance A), N-(diaminomethylene)-4',5'-dihydro-3'H-spiro[fluorene-9,2'-furan]-2-carboxamide (optically active substance B), N-(diaminomethylene) spiro[cyclopropane-1,9'-fluorene]-2'-carboxamide, N-(diaminomethylene)-9-methoxy-9-methyl-9H-fluorene-2-carboxamide, N-(diaminomethylene)-9-ethyl-9-methoxy-9H-fluorene-2-carboxamide, N-(diaminomethylene)-5-fluoro-9-hydroxy-9-methyl-9H-fluorene-2-carboxamide, N-(diaminomethylene)-5-fluoro-9-hydroxy-9-methyl-9H-fluorene-2-carboxamide (optically active substance A), N-

(diaminomethylene)-5-fluoro-9-hydroxy-9-methyl-9H-fluorene-2-carboxamide (optically active substance B), N-(diaminomethylene)-5'-fluorospiro[1,3-dithiolane-2,9'-fluorene]-2'-carboxamide and N-(diaminomethylene)-5-fluoro-9-methoxy-9-methyl-9H-fluorene-2-carboxamide.

7. A pharmaceutical composition comprising the derivative or pharmaceutically acceptable salt thereof described in claim 1 and a pharmaceutically acceptable carrier.

8. The pharmaceutical composition described in claim 7, which is a 5-HT_{2B} receptor and 5-HT₇ receptor dual antagonist.

9. The pharmaceutical composition described in claim 7, which is a prophylactic antimigraine agent.

10. Use of the derivative or pharmaceutically acceptable salt thereof described in claim 1 for producing a 5-HT_{2B} receptor and 5-HT₇ receptor dual antagonist or a prophylactic antimigraine agent.

11. A method for preventing migraine, which comprises administering a therapeutically effective amount of the

fluorene derivative or pharmaceutically acceptable salt thereof described in claim 1 to a patient.